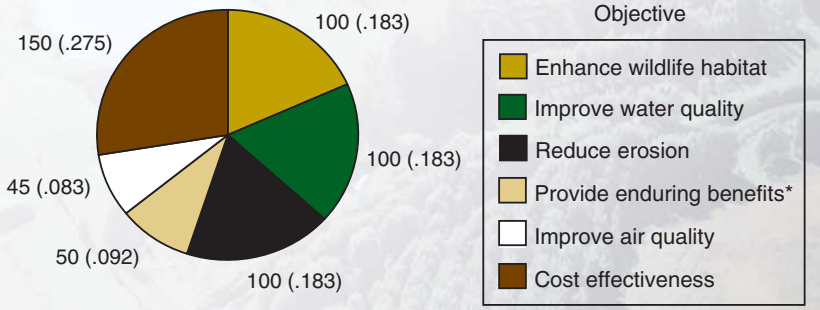
Conservation Programs: Balancing Outcomes With a Selection Index

Many of the Nation's conservation programs help to offset the negative effects of agricultural production by enhancing water quality, reducing soil erosion, and protecting wildlife habitats. One tool many conservation program managers use to balance multiple objectives is a "selection index," which allows them to rank and select applicants based on how well the offered land provides environmental improvements in a cost-effective manner. In this index, different environmental and cost objectives are weighted by program managers' perceptions of their relative importance (see "Behind the Data," page 41). However, gauging which environmental objectives should have the highest priority in these programs is tricky because price tags are generally not available to signal how much people value improving wildlife nesting grounds, for example, or making a stream clean enough for swimming. If new information about environmental preferences becomes available, program managers can, in theory, adjust the weights to align future program outcomes with the new preferences. In practice, little is known about the actual effects of such changes.

Using data from USDA's Conservation Reserve Program (CRP), the Nation's largest land retirement program, ERS researchers found that small changes in index weights did not markedly affect environmental outcomes at the national level. But doubling the index weight on any one objective (such as improving wildlife habitat) could result in a 15-percent improvement in that outcome. These findings suggest that if a conservation program generates environmental improvements that approximately match society's preferences, little would be gained by fine-tuning the index weights. But if new information suggests that an alternative mix of environmental improvements is preferred, program outcomes can be affected by larger changes in weights. Changes in weights may not induce proportional changes in environmental improvements because some factors, such as which land will be offered for enrollment and which set of environmental problems will be addressed in a voluntary program, cannot be controlled.

Policymakers and program managers may find that varying the index weights by region or adjusting other program features, such as eligibility criteria or the mix of allowable land management practices, may also help bring about desired changes in CRP outcomes.

The CRP assigns equal weights to wildlife, water quality, and erosion objectives in its 2003 selection index



Note: Numerical values are the points associated with each objective. Implicit weights are in parentheses.
*Points awarded for "enduring benefits" are based on the likelihood that certain practices (such as tree planting) will remain in place beyond the CRP contract period.

Source: CRP's Environmental Benefits Index, 26th signup (2003), USDA, Farm Service Agency.

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This finding is drawn from . . .

Balancing the Multiple Objectives of Conservation Programs, by Andrea Cattaneo, Daniel Hellerstein, Cynthia Nickerson, and Christina Myers, ERR-19, USDA, Economic Research Service, May 2006, available at: www.ers.usda.gov/publications/err19/

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